

CLAIMS

1. A stabilizer control apparatus comprising:

a stabilizer including a pair of stabilizer bars disposed between a right wheel and a left wheel of a vehicle, and an actuator having an electric motor and a speed reducing mechanism disposed between said pair of stabilizer bars; and control means for controlling said electric motor in response to a turning state of said vehicle, to control a torsional rigidity of said stabilizer, wherein the inverse of the product of a normal efficiency and a reverse efficiency of said speed reducing mechanism is equal to or greater than 1.17 and equal to or smaller than 3.75, and wherein

said control means controls an output of said electric motor to be held or reduced, when the turning state has come to be out of such a range that a rolling motion of a vehicle body can be actively controlled.

2. A stabilizer control apparatus comprising:

a stabilizer including a pair of stabilizer bars disposed between a right wheel and a left wheel of said vehicle, and an actuator having an electric motor and a speed reducing mechanism disposed between said pair of stabilizer bars; control means for controlling said electric motor in response to a turning state of said vehicle, to control a torsional rigidity of said stabilizer; steering angle detection means for detecting a steering

angle of said wheels;

vehicle speed detection means for detecting a vehicle speed of said vehicle;

lateral acceleration detection means for detecting an actual lateral acceleration of said vehicle; and

lateral acceleration calculating means for calculating a lateral acceleration on the basis of the results detected by said vehicle speed detection means and said steering angle detection means, wherein

said control means controls said electric motor on the basis of at least one of the calculated lateral acceleration calculated by said lateral acceleration calculating means and the detected actual lateral acceleration detected by said lateral acceleration detection means, to control the torsional rigidity of said stabilizer, and wherein

said control means holds an output of said electric motor to perform a holding control, in the case where the turning state has come to be out of such a range that a rolling motion of a vehicle body can be actively controlled, and sets values of the acceleration obtained when said holding control starts and a normal efficiency and a reverse efficiency of said speed reducing mechanism, to provide such a value that the lateral acceleration obtained when said holding control starts, is multiplied by the inverse of the product of the normal efficiency and the reverse efficiency of said speed reducing mechanism, to be equal to or greater than the lateral acceleration obtained in response to a

turning limit of said vehicle.

3. A stabilizer control apparatus comprising:

a stabilizer including a pair of stabilizer bars disposed between a right wheel and a left wheel of said vehicle, and an actuator having an electric motor and a speed reducing mechanism disposed between said pair of stabilizer bars;

control means for controlling said electric motor in response to a turning state of said vehicle, to control a torsional rigidity of said stabilizer;

steering angle detection means for detecting a steering angle of said wheels;

vehicle speed detection means for detecting a vehicle speed of said vehicle;

lateral acceleration detection means for detecting an actual lateral acceleration of said vehicle; and

lateral acceleration calculating means for calculating a lateral acceleration on the basis of the results detected by said vehicle speed detection means and said steering angle detection means, wherein

said control means controls said electric motor on the basis of at least one of the calculated lateral acceleration calculated by said lateral acceleration calculating means and the detected actual lateral acceleration detected by said lateral acceleration detection means, to control the torsional rigidity of said stabilizer, and wherein

said control means reduces an output of said electric motor to perform a reducing control, in the case where the turning

state has come to be out of such a range that a rolling motion of a vehicle body can be actively controlled, and sets values of the acceleration and a normal efficiency and a reverse efficiency of said speed reducing mechanism provided when said reducing control starts, to provide such a value that the lateral acceleration obtained when said reducing control starts, is multiplied by the inverse of the product of the normal efficiency and the reverse efficiency of said speed reducing mechanism, to be equal to or greater than the lateral acceleration obtained in response to a turning limit of said vehicle.

4. A stabilizer control apparatus as set forth in claim 2 or 3, characterized in that the values of the normal efficiency and the reverse efficiency of said speed reducing mechanism are set to be within such a range that the inverse of the product of the normal efficiency and the reverse efficiency of said speed reducing mechanism is equal to or greater than 1.17 and equal to or smaller than 3.75.